Omega
Service Guide

Service guide files and updates are available
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Conventions

The following conventions are used in this manual:

SCREEN MESSAGES	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional Information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPOTENT	Reminds you to do specific actions, relevant to the accomplishment of procedure.

Preface

Before using this information and the product it supports, please read the following general information.

1. This service guide provides you with all technical information relating to the BASIC CONFIGURATION decide for Acer"s " global" product offering. To better fit local market requirement and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine. These LOCALIZED FEATURES will NOT be recovered in this generic service guide. In such cases, please contact your regional office or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regionalweb or channel. If, for whatever reason, a part number change is made, it will not be noticed in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDER, your Acer office may have a DIFFERENT part number code to those given in the FRU of this printed Service Guide. You must use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Overview

Chapter 1:

a. Product Features / HW Spec
b. Product six view and description
c. System block diagram

Chapter 2:

a. Software Upgrade SOP (SOP of SD Download and EUU)
b. Service tool SOP

Chapter 3:

a. Disassembly and Assembly SOP
b. Required tools and screws

Chapter 4:

Diagnostic Tool SOP

Chapter 5:

Serial Number Definition

Chapter 6:

a. Exploded Diagram and Description
b. SPL List

Chapter 1:

a. Product Features / HW Spec

System	
Operating System	● Android lollipop (5.0)
Processor	CPU(BGA) Intel Atom Z3735F SoC 1.83G 2M 2.5W C Stepping Valleyview 2x32 DDR3L-RS Intel HD Gen7LP CPU(BGA) Intel Atom Z3735G SoC 1.83G 2M 2.5W C Stepping Valleyview 1x32 DDR3L-RS Intel HD Gen7LP (codesign)
Memory	● RAM ■ 2 GB of DDR3L memory ■ 1GB of DDR3L memory (When use Z3735G) ● eMMC ■ 16GB / 32GB / 64GB
Display	
Display	HSD 10.1" 16:10 TFT-LCD,370nits, 225PPI, MIPI AUO 10.1" 16:10 TFT-LCD,400nits, 225PPI, MIPI
Resolution	1920 x 1200
View angle	Wide view angle 85/85/85/85 degree (should base on device, not based on LCM)
Typical backlight	370nits
Pixel Pitch	0.1695 x 0.1695mm (HSD) 0.11292 x 0.11292 mm (AUO)
Contrast ratio	HSD:1000:1 AUO:800:1
Touch Panel	EMC(Elan) Touch IC 3915M 10 point Touch panel Support EZ Wakeup ,Precision plus
Mechanical	
Dimensions	176(L) x 260(W) x 9.7(H) mm
Weight	< 540 g
Modem	
3G	N/A
LTE	HUAWEI ME906s (codesign)

Antenna performance	
Wireless LAN 802.11 ac/a/b/g/n WiFi	
Chipset	Azurewave AW-CH639 SIP module (Chipset BCM4339)
MAC address	Device must contain WiFi MAC address before shipment
Frequency range	Support 2.4GHz band and 5G
Data Rates	802.11ac: MCS0~9 VHT40/VHT80
	802.11a: 54Mbps
	802.11b: 11Mbps
	802.11g: 54Mbps
	802.11n: MCS 0~7
Operating Range	Indoor <= 100m
Output Power	11a : 14dBm ± 3dB 11ac : 12dBm ± 2dB 11b : 15dBm ± 3dB 11g : 14dBm ± 2dB 11n : 11dBm ± 2dB
Receive Sensitivity	802.11ac: under -60dBbm at VTH40 MCS9
	802.11a: under -70dBbm at 54Mbps
	802.11b: under -83dBbm at 11Mbps
	802.11g: under -70dBm at 54Mbps
	802.11n: under -67dBm at MCS 7 (2.4GHz only)
Antenna	Single antenna (without diversity)
	Support 2.4 & 5GHz band.
	Performance should meet test summary document released by Acer DQM.
Bluetooth® 4.0	
Chipset	Azurewave AW-CH639 SIP module (Chipset BCM4339)
MAC address	Device must contain Bluetooth MAC address before shipment
Support Profiles	● A2DP 1.2 (Advanced Audio Distribution Profile) ● AVRCP 1.3 (Audio/Video Remote Control Profile) ● HID 1.0 (Human Interface Device Profile) ● OPP 1.1 (Object Push Profile) ● HOGP 1.0 (HID over GATT) ● SPP 1.1 (Serial Port Profile)
Frequency Range	2.4 GHz (2.400 ~ 2.4835 GHz)
Modulation	GFSK, π/4 DQPSK and 8DPSK

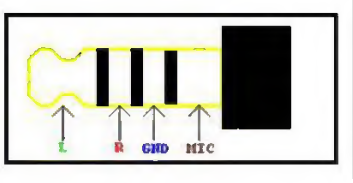
Channel	79 channels
Data Rates	Basic data rates: GFSK (1Mbps)
	EDR data rates: π/4 DQPSK (2Mbps) and 8DPSK (3Mbps)
Operating Range	10m
Output Power	Class 1 (0dBm~20dBm)
Receive Sensitivity	Under －80 dBm, BER of 0.1%
Antenna	Share the same antenna from WiFi
	Performance should meet test summary document released by Acer DQM.
GPS	
Chipset	BCM4752
Sensitivity	Tracking Sensitivity ≦-152 dBm (1 SV at least)
	Acquisition Sensitivity ≦-140 dBm (4 SVs at least)
Accuracy	Hot start: less than 7 seconds (* subject to test environments)
	Warm start: less than 40 seconds (* subject to test environments)
	Cold start: less than 50 seconds (* subject to test environments)
	Position: within 10m for 90%
	Velocity: 0.1m/s (* subject to test environments)
Protocol	NMEA-0183 v3.0
	GGA, GLL, GSA, GSV, and RMC
Antenna	Frequency: 1.575 GHz~1.612GHz (Support GPS & GNSS)
	VSWR 2：1
	Performance should meet test summary document released by Acer DQM.
	Pattern Type: Omni-directional
Battery	
Battery Capacity	Battery SONY AP14A Polymer 1S2P SONY 2 Cell 5930 mAh Main COMMON
Battery Life	Standby time on flight mode: min 270 hours
	User behavior test : Up to 7.5 hours base on below sop Test step 1. Factory reset 2. Set screen brightness to 100 nits 3. Connect to WiFi and login Google account (Disable backup/restore) 4. Others settings keep in default 5. Plug in wired headset 6. Charging battery to 100% 7. Repeat 720P video playback 8. Plug out AC adapter and start test.
	Video playback: DPST (on/off TBD): up to 7 hours when play 720P H.264 video playback on

	system (not streaming, Wifi/3G/BT /NFC off, total solution 125 nits)
	DPST (on/off TBD): Youtube playback 720p video min. 5 hours via WIFI.
	Detailed criterion defined in the test summary document released by Acer DQM.
Battery low	Two battery level 1.Battery low: when battery capacity is 15 % 2.Battery very low: when battery capacity is 4 %
Charging Time	1 hour charging to 30% capacity (when in the dark mode) 5 hours charge from empty to full by AC adapter (when in the dark mode)
Battery Protection	Protection for overheat, overcharge, over-discharge, over- current, over-voltage
Temperature	Battery: (1) Operating Temperature Charge: 0℃ ~ 50℃ Discharge: -20℃ ~ 60℃ Storage Temperature: -20℃ ~ 60℃ < 1 month ; percentage recoverable capacity 80%

Audio

- Dual speaker: 1 Watt x 2
- Audio Jack : 3.5mm 4 ring earphones with microphone Jack

  Pin define:

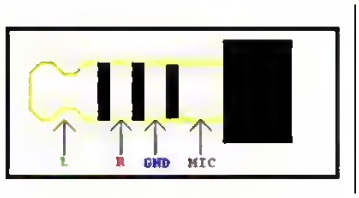


- Voice performance should be certificated by HATS.
- [VoIP-headset] Headset Sending loudness should be 3dB~13dB and Headset Receiving loudness shouldn't be over -13dB. (The test item is under checking by Quanta HW team/Acer acoustic team).
- [VoIP-handheld hands-free] Handheld hands-free sending loudness should be 15dB at 30cm and handheld hands-free receiving loudness should be 10dB at 30cm. (The test item is under checking by Quanta HW team/Acer acoustic team).
- Headphone application must meet EN50332.
- Single Digital Microphone.
- ASR assist

Camera

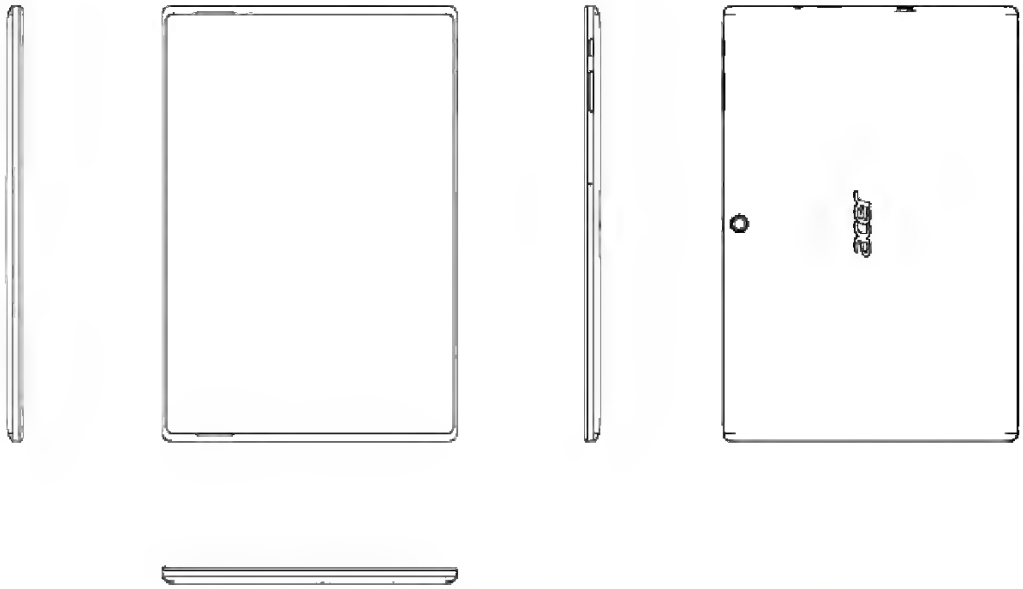
Camera	● Front camera : 2MP Camera with Fix Focus (OV2680) with ZSL mode ● Preview 30fps @ 1600x1200

	• Photo capture <1/20" @ 1600x1200 in JPEG • Video capture recording at 30fps @ 720p in 3gp format ● Rear camera : 5MP Camera with Auto Focus (OV5670) with ZSL mode • Preview 30fps @ 2560x1920 • Photo capture <1/20" @ 2560x1920 in JPEG • Video recording at 30fps @ 1080p in 3gp format (CPU:3735F) • Video recording at 30fps @ 720p in 3gp format (CPU:3735G)
Button	
POWER	• Long press > 1 second (±10%) to power on (when device is off). • Long press 1 second to show power-off dialog (when device is on even in lock state) • Once CPU is on, system Acer logo should show up within 2 seconds. • Press to suspend the device (when device is on) • Press to resume the device (when device is in suspend mode) ■ Once if the system resumes, system will be back to lock screen. ■ If system is in lock screen, without unlock by user, the system will suspend after 10 seconds • Long press 5 seconds (±1%) to force power-off device (when device is on, or in power-on procedure, or in lock state) • **The method to lunch boot menu**: ■ Hold volume up and press **power key** for 1 second ■ Release **power key** ■ Release volume up
Volume UP/Down	**Volume up/down:** Press to increase/decrease the volume ● Press right key to volume up in landscape mode, both of 0° orientation and 180° orientation; The other to volume down. ● Press the upper key to volume up in portrait mode, both of 90° orientation and 270° orientation; The other to volume down.
Screen lock	N/A
Reset hole	N/A
Clean boot	N/A
LED Indication	
	N/A
Connector	

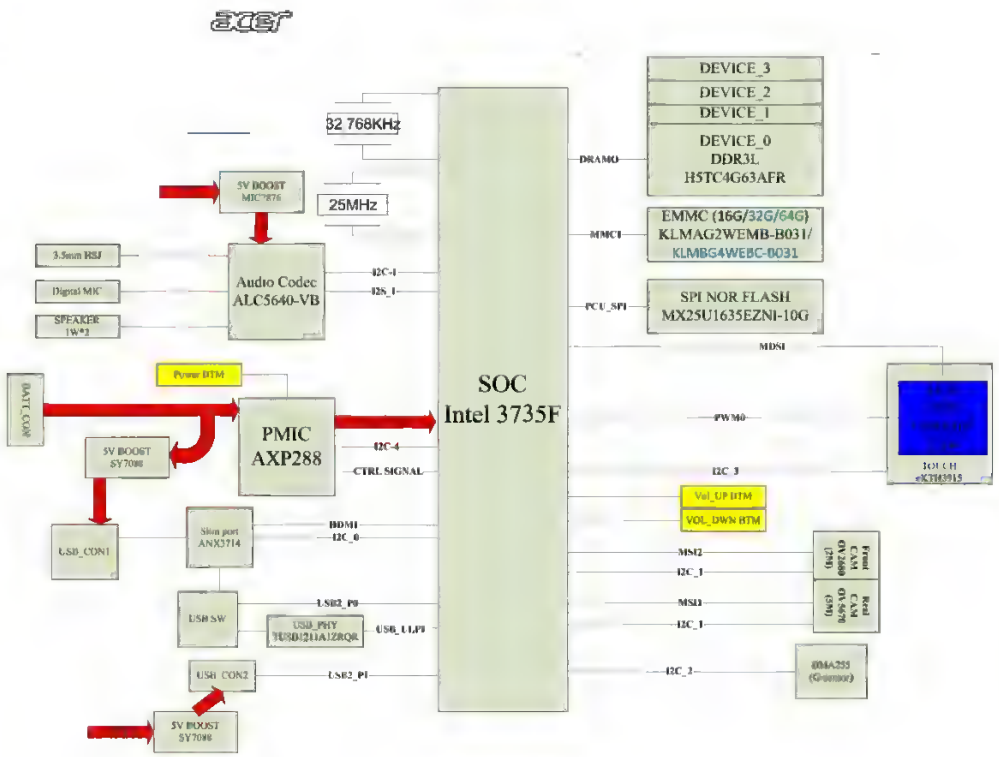
USB	NA		
Micro USB	• Micro-USB 2.0, OTG w/ SlimPort (Support dongle:ANX7330(HDMI) & ANX 7332(VGA)) • VID: 0502 • Life cycle: Min. rating of 10K connect / disconnect cycles		
HDMI	N/A		
Audio Jack	• 3.5mm Audio Jack 4ring (with Mic) 		
Micro SD connector	• MicroSD memory card up to 64G • Support hot-plug • Push-push type connector • Read Micro SD cards formatted: FAT / FAT32/NTFS/exFAT		
Sensor			
G-Sensor	Bosch BMA255		
Slimport	ANX3714		
eCompass	N/A		
Gyro-meter	N/A		
P-Sensor	N/A		
Certification			
ESD	Requirement should meet test summary document released by Acer DQM.		
Certification	• CE / FCC / IC / NCC / CB / BSMI / BQB / WiFi / WHQL • Country List: Defined in the document “Omega country list”		
Wifi certification (TBD)	■Wifi logo (station mode)	802.11n	□No,802.11■b/g/n(2.4G) ■a/n(5G) ■ac(5G)
		WPS	□No ■Yes
		Wi-Fi Direct	□No■Yes (function ready, no certification)
		Wi-Fi TDLS	□No □Yes
		Miracast	□No ■Yes (function ready, no certification)

	□WiFi logo (AP mode)	802.11n + WPS	□No 802.11 □b/g/n(2.4G) □a/n(5G) □ac(5G)
Accessory			
Accessories (in box)	• USB Cable • Charger + Plug • QSG		
Accessories (optional)	• Micro SD Card • Pouch • Wired Keyboard • Passive Pen (Nib 2mm)		
Others			
Vibrator	• N/A		

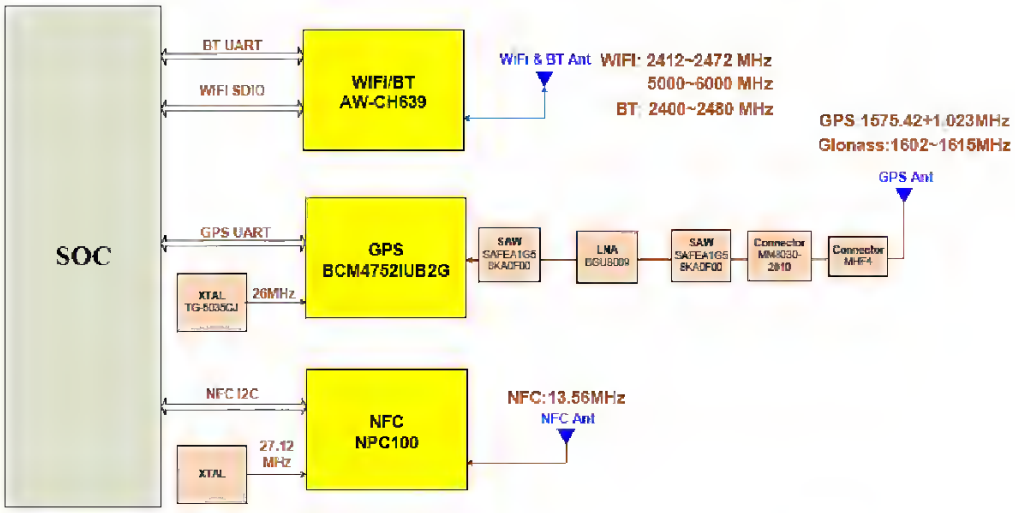
b. Product six view and description

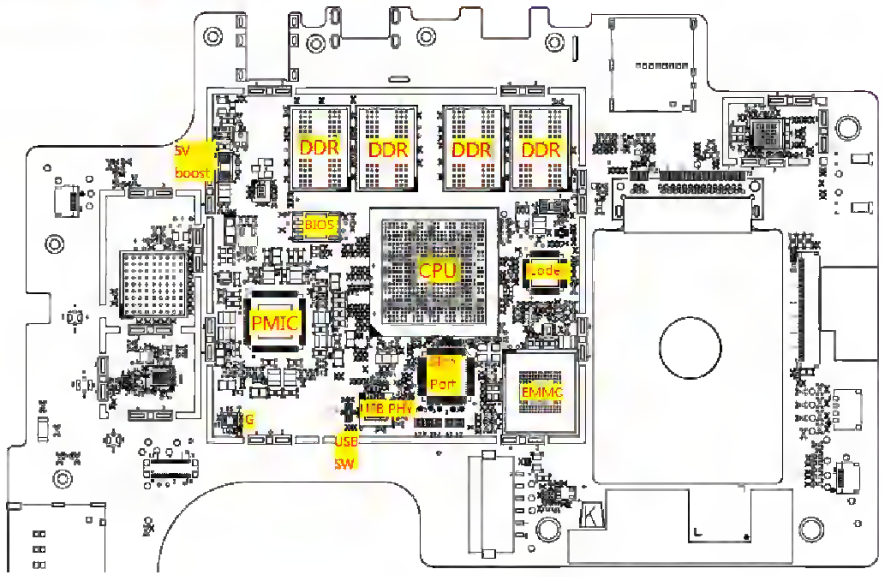


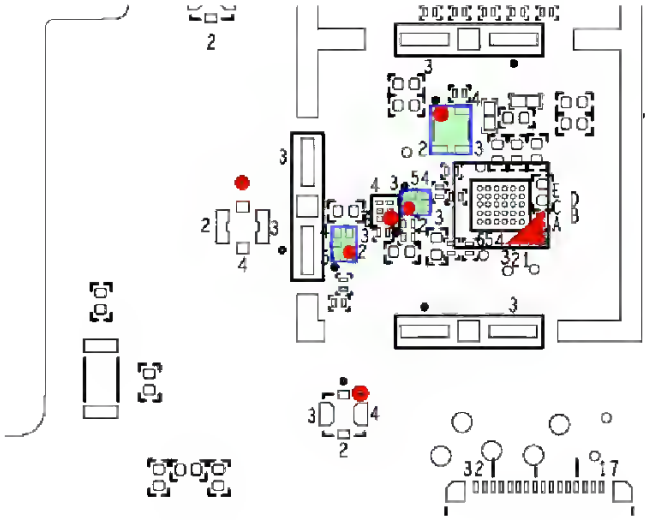
c. Block Diagram



Omega WIFI /BT/GPS/NFC Block diagram







Chapter 2:

a. Software Upgrade SOP

Need to provided by Acer SW

Chapter 3: Disassembly and Assembly SOP

Disassembly:

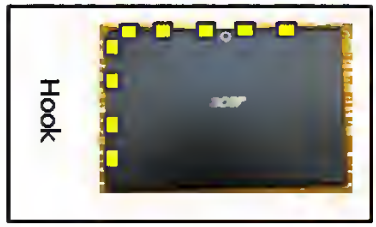
Disassembling tool

Plastic stick 橇棒 (厚度 0.5~0.7mm)
tweezers 小型鑷子
tweezers 十字起子(#0)

1. Insert the plectrum into gap which next to the side key.

2. Hold the plastic stick and gash the gap, slide and separate the back cover base on the direction of clasp.

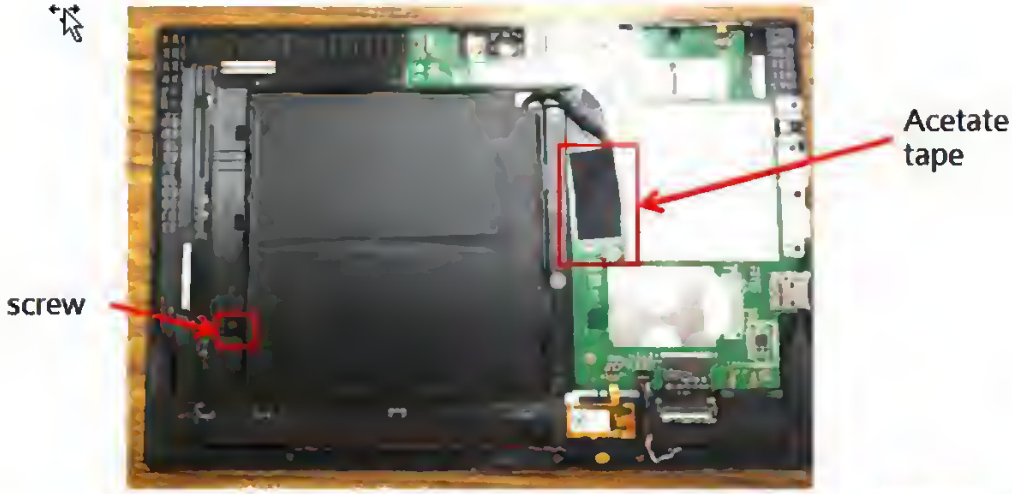
Slide the plastic stick until the middle position of bottom and break open LCD cover by pressing down the plastic stick

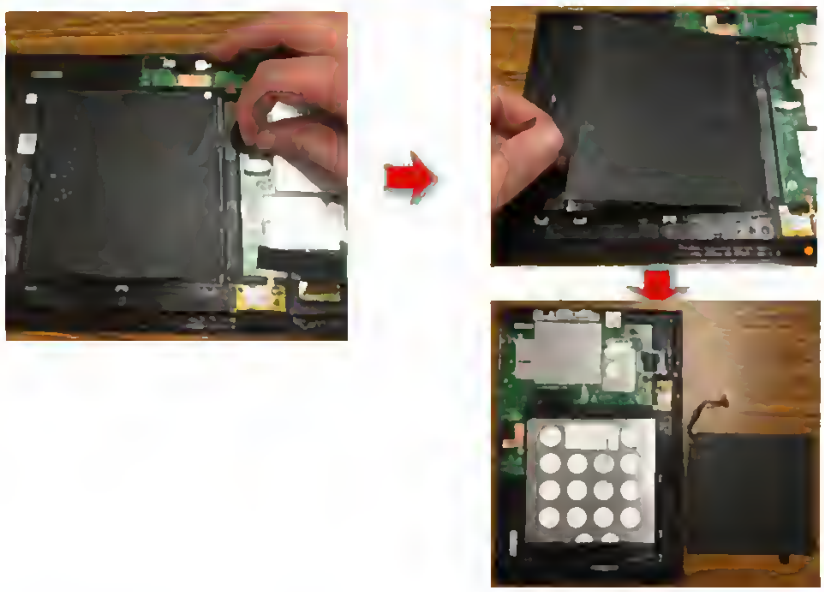


3. Hold the cover and take off the cover base on the axis of LCD cover up side.

4. Take off the battery

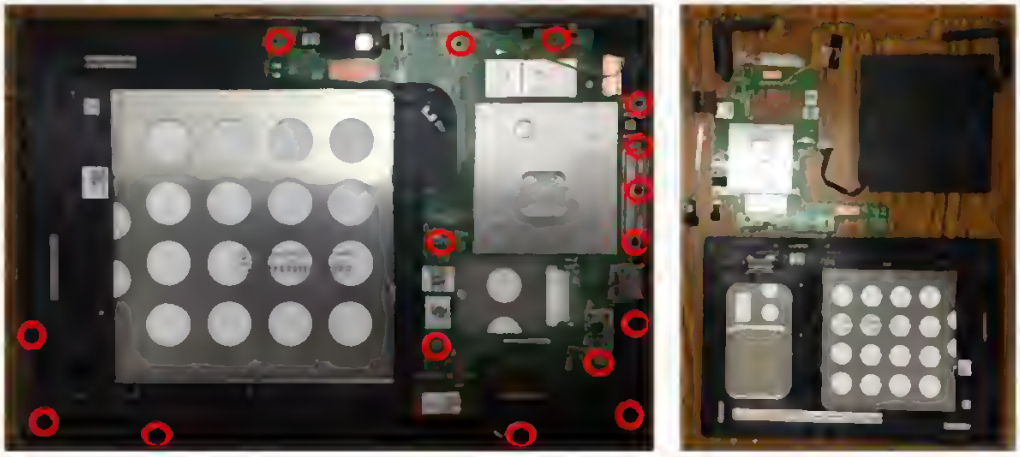
   Remove the screw and Tear off the tap on connector, and separate the battery connector, and pulling two side of battery sticker.





5. Take off the main PCBA board

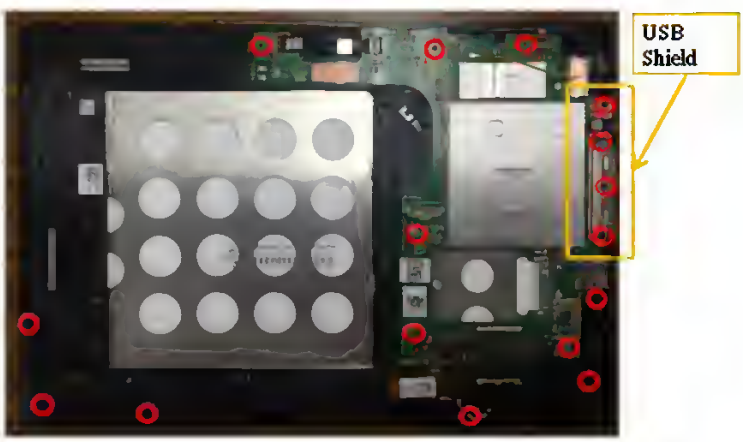
   Remove the screw and take off the speaker box, USB metal holder, and separate all connector, take off FPC and antenna board. After that you can separate the PCBA and other parts.



7. Finish. All parts disassembled drawing

Assembly:

Step1. Place M/B and speaker on LCM, then lock shield and all screws as below :



Step2. Place battery then plug connector and lock screw.

Step3. Lack screw and stick acetate tape on connectors.

Step 4. Base on direction to assembly back cover, and make sure the well locking with device.

Chapter 4:

Diagnostic Tool SOP

Need to provided by Acer SW

Chapter 5:
Serial Number Definition

Acer 22 Barcode

Follows Code 128 standard –refer to http://www.adams1.com/pub/russadam/128code.html

Acer 22 Code SN

PPPPPPPPPPYWWSSSSSMMVV

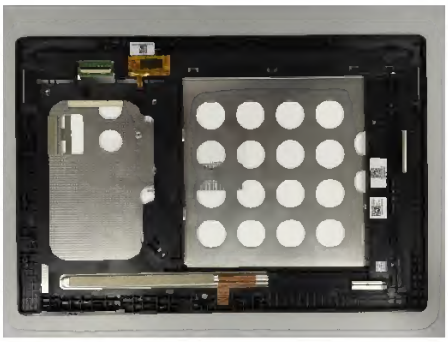
Code	Description
PPPPPPPPPP	Acer Part Number
YWW	3 digit numeric year and week code
SSSSS	5 character unique hexadecimal code by manufacturer base and reset each week (0-9, A, B, C, D, E, F 16 code)
MM	Manufacturer code
VV	English version code

Acer SNID

YWWddddddMM

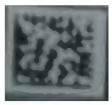
Code	Description
YWW	3 digit numeric year and week code (as above)
dddddd	6 unique decimal numbers derived from Acer 22 Code SN (SSSSS) Transfer Rule: $S_1S_2S_3S_4S_5$ dddddd = $S_1 * 16^4 + S_2 * 16^3 + S_3 * 16^2 + S_4 * 16^1 + S_5$ Example: Acer FG SN (SSSSS) = 001FD, SNID (dddddd) = $1 * 16^2 + 15 * 16 + 13$ = 000509.
MM	Manufacturer code (as above)

- TP/LCD+Bezel



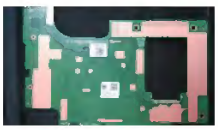
- Rear CCD

Front CCD



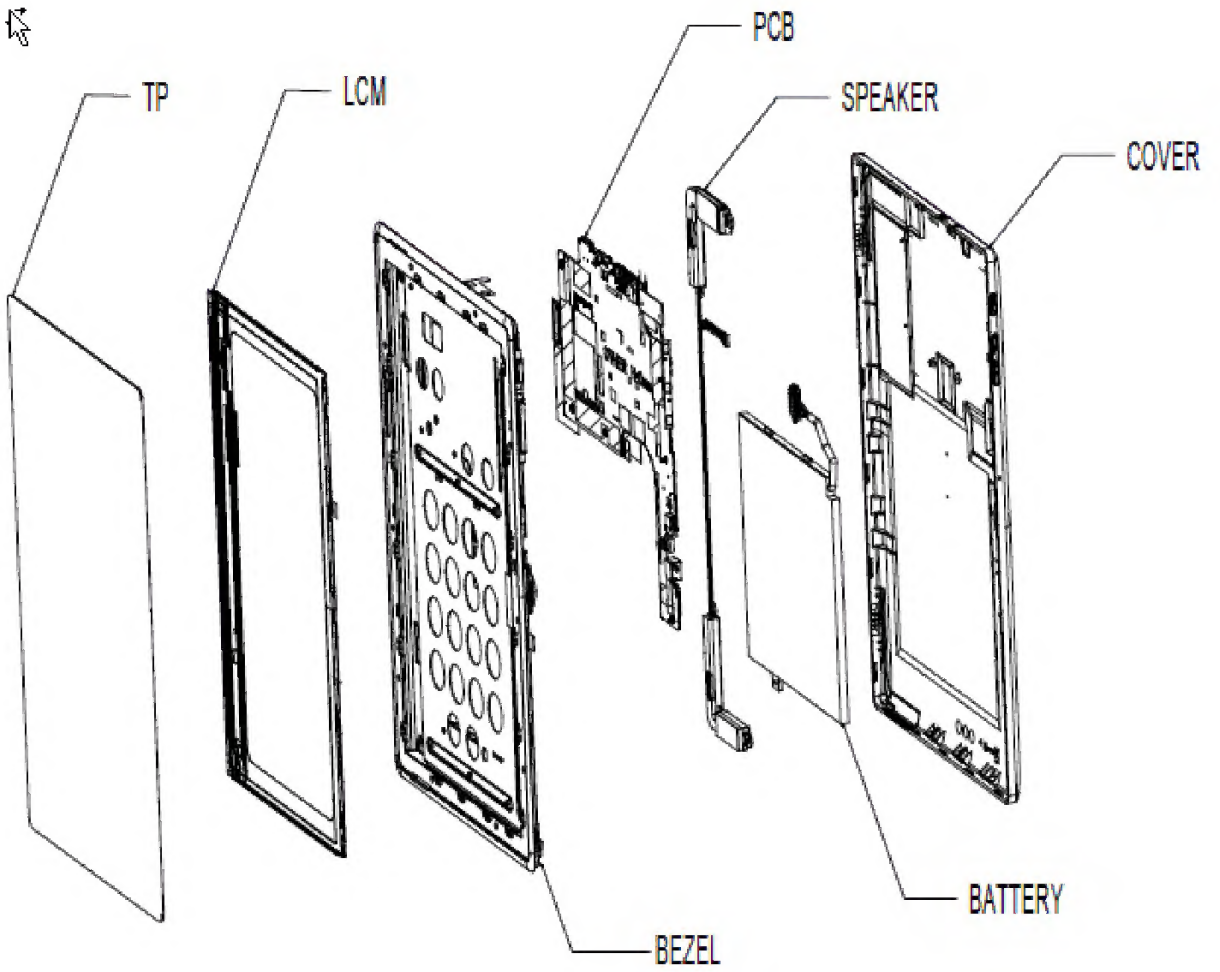
- Battery

- Main board



Chapter 6:

a. Exploded Diagram and Description



b. SPL List

LEVEL	CATEGORY	1 Tier PN	Acer PN	usage	Acer Description	ODM Description	Picture
1	ACCESSORY	1HYGZZZ081S	50.L4CN7.003	1	MICRO USB CABLE FOR 10W ADAPTER	CABLE ASSY NKV MICRO USB(4P/5P,30V,3A)	
1	ACCESSORY	1HYGZZZ074J	XZ.70200.182	1	Plug DELTA 18W 12V/1.5A UK Plug only	ADP-090 (UK)	
1	ACCESSORY	1HYGZZZ074K	XZ.70200.181	1	Plug Delta 18W 12V/1.5A EU Plug only	ADP-092 (EU)	
1	ACCESSORY	1HYGZZZ074L	HC.70211.004	1	Plug DELTA 18W 12V/1.5A US Plug-90 degree	ADP-104 (US 90度)	
1	Adapter		KP.01001.001	1	Adapter DELTA 10W 5.35V/2A ADP-10HW AA LF changeable	ADP-10HW AA	
1	Adapter-EU fixed		KP.01003.006	1	Adapter LITE-ON 10W 5.35V/2A PA-1100-25AE	ADP(5.35V,2A)PA-1100-25AE	
1	Adapter-US fixed		KP.01003.005	1	Adapter LITE-ON 10W 5.35V/2A PA-1100-25AW	ADP(5.35V,2A)PA-1100-25AW	
1	Battery	1HY4ZZZ054A	KT.00204.002	1	Battery LGC AP14A Polymer 1S2P LGC 2 Cell 57	BATT 1S2P(3.8V,LIS2211ACPC(SY6))STN8SQ S/P	
1	Antenna	1HY4ZZZ0548	50.L9YN7.001	1	ANTENNA WIFI QTNKFWIPB01+A S/P	ANTENNA WIFI QTNKFWIPB01+A S/P	
1	Antenna	1HY4ZZZ054C	50.L9YN7.002	1	ANTENNA SR-RQNKF-001 (NFC) S/P	ANTENNA SR-RQNKF-001 (NFC) S/P	
1	Cable	1HY4ZZZ0548	50.L9YN7.003	1	CABLE FPC NKE LCD 3.3V S/P	CABLE FPC NKE LCD 3.3V S/P	
1	CABLE	1HYGZZZ096I	50.L7EN7.002	1 1	SIDE KEY FPC (PWR+VOL)	NKU KEYPAD BOARD W/FPC(JD4009A0)JTF	
1	Camera-2M	1HY4ZZZ0547	NC.21411.03W	1	2M Camera OV2680 OV2680	CAMERA MODULE(CMOS,2M) S/P	
1	Camera-5M	1HY4ZZZ0546	NC.21411.043	1	Chicony 5MAF STD CH_OV5670_4P 90 degree	CAMERA MODULE (CMOS,5M) S/P	
1	MISCELLANEOUS	1HY4ZZZ053W	33.L9YN7.001	1	METAL USB COVER NKF(EBNKF003,R3A) S/P	METAL USB COVER NKF(FBNKF003,R3A) S/P	
1	MISCELLANEOUS	1HY4ZZZ054E	60.L9YN7.001	1	NKE LCD COVER ASSY COSMO BLUE S/P	NKE LCD COVER ASSY COSMO BLUE S/P	
1	LCD	1LDMZZZ010Q	6M.L9YN7.001	1	NKF LCD 10.1" W/TP&BZL ASSY, BLACK S/P	NKF LCD 10.1" W/TP&BZL ASSY, BLACK S/P	
1	MAINBOARD	11MBBZZ0249	NB.L9Y11.001	1	NKF MB 16G ASSY W/CPU 1.33GHZ S/P	NKF MB 16G ASSY W/CPU 1.33GHZ S/P	
1	MAINBOARD	11MBBZZ024A	NB.LA011.001	1	NKF MB 32G ASSY W/CPU 1.33GHZ S/P	NKF MB 32G ASSY W/CPU 1.33GHZ S/P	
1	MAINBOARD	11MBBZZ024C		1	NKF MB 64G ASSY W/ CPU 1.33GHZ S/P	NKF MB 64G ASSY W/ CPU 1.33GHZ S/P	
1	CASE/COVER/BRACKET ASSEMBLY	1HY4ZZZ054G	47.L9YN7.001	1	COPPER FOIL PCB NKE(JXNKF017,REV3A) S/P	COPPER FOIL PCB NKE(JXNKF017,REV3A) S/P	
1	MISCELLANEOUS	1HY4ZZZ055X	47.L9YN7.002	1	TAPE CONN LCM NKF(JXNKF002,REV3A) S/P	TAPE CONN LCM NKF(JXNKF002,REV3A) S/P	
1	MISCELLANEOUS	1HY4ZZZ053Y	47.L9YN7.003	1	ACETATE TAPE PCBA NKF(JXNKF003,REV3A) S/P	ACETATE TAPE PCBA NKF(JXNKF003,REV3A) S/P	
1	MISCELLANEOUS	1HY4ZZZ0540	47.L9YN7.004	1	ACETATE TAPE BATT NKF(JXNKF008,REV3A) S/P	ACETATE TAPE BATT NKF(JXNKF008,REV3A) S/P	
1	MISCELLANEOUS	1HY4ZZZ0541	47.L9YN7.005	3	ACETATE TAPE SIDEKEY NKF(JXNKF004,R3A) S/P	ACETATE TAPE SIDEKEY NKF(JXNKF004,R3A) S/P	
1	MISCELLANEOUS	1HY4ZZZ0545	47.L9YN7.006	1	AL FOIL SHIELDING NKF(JXNKF015,REV3A) S/P	AL FOIL SHIELDING NKF(JXNKF015,REV3A) S/P	
1	MISCELLANEOUS	1HY4ZZZ054D	47.L9YN7.007	1	AL FOIL CAMERA NKF(JXNKF016,REV3A) S/P	AL FOIL CAMERA NKF(JXNKF016,REV3A) S/P	
1	MISCELLANEOUS	1HYGZZZ096N	47.L7EN7.001	1	MIC RUBBER	RUBBER MIC NKU(GANKU002,REV3A)	
1	MISCELLANEOUS	1HYGZZZ075G	47.L3WN6.015	1	WATER INDICATOR LABEL	WATERPROOF LABEL PA NKD(HCNKD009,REV3A)	
1	MISCELLANEOUS	1HYGZZZ075H	47.L3WN6.016	1	DISMANTLE LABEL	NKD LBL PL SEAL S/P	
1	Screw	1HY4ZZZ0542	86.L9YN7.001	13	SCREW M1.4*3.5-I(BNI)IRON S/P	SCREW M1.4*3.5-I(BNI)IRON S/P	
1	Screw	1HY4ZZZ0543	86.L9YN7.002	3	SCREW M1.6*1.6-I (NI)(NYLOK)IRON S/P	SCREW M1.6*1.6-I (NI)(NYLOK)IRON S/P	
1	Screw	1HY4ZZZ0544	86.L9YN7.003	1	SCREW M1.6*3-I(BK)(NYLOK)IRON S/P	SCREW M1.6*3-I(BK)(NYLOK)IRON S/P	
1	Speaker	1HY4ZZZ0549	23.L9YN7.001	1	SPEAKER S W/O DEVICE S/P	SPEAKER S W/O DEVICE S/P	